

PROGRESS AND PLANS FOR BONNEVILLE SALT FLATS STUDY
JUNE 3, 1992

PROGRESS:

Mass water-level measurements were made on wells completed in the shallow-brine during March. These values have been plotted on GIS coverage for contouring. Water levels need to be corrected for density before a corrected potentiometric surface can be drawn.

map of raw data

Deep observation wells in the vicinity of unused production well were developed in preparation for alluvial-fan aquifer test. Protective surface casings were cemented into place.

A 100-foot observation well was completed on the west margin of the Pilot Valley playa. Three cores were obtained for pore-fluid extraction and analysis. These data will aid in the understanding of the hydrologic system in Pilot Valley.

A 72-hour aquifer test was completed during the second week in May. The test was designed to obtain estimates for hydraulic properties of the alluvial-fan aquifer and the overlying clays. Numerous problems were encountered during the test. The well was not developed after drilling or because of the lack of use, the water level in the well fluctuated during pumping. The well was pumped for 8 hours prior to the test with a considerable amount of pebbles and clay in the discharge water. Problems with the data loggers resulted in the loss of data from nested piezometers OW-1 and OW-4. Data were obtained from wells OW-2, OW-3, OW-E, and the deep piezometers in OW-5 and OW-6. Data from OW-5 and OW-6 show no response. With data obtained from functioning data loggers, values for transmissivity and storage for the alluvial-fan aquifer can be obtained. Interpretation of data is required before an estimate for vertical hydraulic conductivity of the overlying clays can be determined. If the existing data are determined to be insufficient to meet the needs of the project, a second aquifer test will be conducted.

clay plugging pump

deepest piezometers #OW-5

*OW-1 response varies at dif. depths
should test be redone?*

pumping of alluvial fan wells - no impact at 5000' distance

1500' gal/min

*collecting samples this summer for analysis
major cations - anions - list to work group*

A set of black and white IR photos were obtained of the surface ponds on the Bonneville Salt Flats in early spring. Problems with this procedure for interpretation of pond movement include difficulty in determining actual pond boundary and speed with which ponds migrate and the preparation time required to make a flight.

can see about
3/10 ft water

PLANS:

- 1 Make density corrections for water-level data and construct potentiometric-surface maps. Measure water levels in mid-summer and produce potentiometric-surface maps. *do again in mid summer*
- 2 Drill additional monitoring wells in Pilot Valley and collect data.
- 3 Drill additional monitoring wells along I-80 prior water-level measurements in mid-summer. *prior to 1*
- 4 Collect cores directly beneath salt crust for geochemical interpretations. *Review geochem aspects at GS on 6/5 at 8:30 am*
geochemistry of salt layers
- 5 Collect water samples from selected wells on the Bonneville Salt Flats and Pilot Valley for chemical analysis. *Resample existing wells where possible.* *Br/Cl ratios*
- 6 Preliminary modeling will be completed by the end of July in order to identify any additional data requirements before the end of the field season. *1 meter cores below the salt*

784 ac ft (⁴8/7/92) water on salt flats based on x-sec. Air photos haven't worked well for calc. volume of H₂O.

Use of land sat imagery
Unaff in outs goes under at break in slope.